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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/505,453

09/01/2004

Yasunori Miki

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8270

7055 7590 07/14/2008
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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT

PAPER NUMBER

3742

NOTIFICATION DATE

DELIVERY MODE

07/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary	Application No. 10/505,453	Applicant(s) MIKI ET AL.	
	Examiner M. Alexandra Elve	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/04, 2/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-16 & 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (USPN 6,712,625).

Saito et al. discloses:

An electronic component is obtained by forming a primer plating layer of a material which is poorly wettable to a weld brazing material 3 on a base member 11X of a contact 11 having a terminal section 111 for brazing and a contact section 112, and then forming a finish plating layer of a material which is highly wettable to the weld brazing material on the primer plating layer. An exposed region of the poorly wettable primer plating layer is formed thereafter by **selectively removing a portion of the finish plating layer at the terminal section 111 and served as an arresting region** for arresting the weld brazing material 3 from creeping up and migrating along the highly wettable plating layer in brazing the terminal section 111 to the brazing pad 22 of a wiring board 2. (abstract)

For the material of which the base member of the contact 11 is made, where the exposed surface region of the base member is utilized as the arresting means, it is preferable to use copper, copper alloy such as Cu--Ti, Cu--Be, Cu--Sn, Cu--Mg, **Cu--Ni**, and Cu--Zn alloy which may contain P or Si as additives, and other metals such as Co, Mn, Pb, Al, Fe, and SUS. As to the finish plating material applied to the surface of the contact 11, it is preferably to use gold, tin or tin alloy such as Sn--Ag, Sn--Cu, Sn--Cu--Ag alloy, and lead or lead alloy such as Pb--Sn alloy, and palladium or palladium alloy such as Pd--Ni, Pd--Co alloy. (col. 3, lines 50-61)

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According to still another aspect of the invention, **a primer plating layer comprising a nickel alloy, such as Ni--P, Ni--S, or Ni--B alloy**, may be applied to the surface of the base member of the contact 11 prior to forming the finish plating layer so as to enhance fastened formation of the finish plating. (col. 3, lines 62-67)

...feasible to form a contact with terminal section and contact section in any desirable shape by molding of any suitable material, by forming a Ni alloy layer all over the surface of the contact through electro-less plating, by forming a finish gold plating on the primer plating, and by removing a part of the gold plating at the terminal section to thereby obtain an exposed portion 114 of the primer plating acting as the arresting means. (col. 4, lines 7-15)

The process of **selectively removing a portion of the highly wettable layer formed on the surface of the contact 11 to define the poorly wettable exposed portion 114** may be easily carried out with a good processing positional precision by applying the mechanical cutting or grinding (machining) technique, electric discharge machining technique, electron-beam machining technique or **laser beam machining** technique to the region in which the poorly wettable exposed portion 114 is to be formed. (col. 4, lines 24-33)

In this embodiment, a portion of the highly wettable region composed of a finish plating layer 111A formed on the surface of the contact 11 is selectively removed in the shape of a band or swath to expose the corresponding portion of the underlying primer plating layer of the terminal section 111 to thereby define a poorly wettable exposed or bare portion 114. (col. 5, lines 9-15)

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FIG. 6a

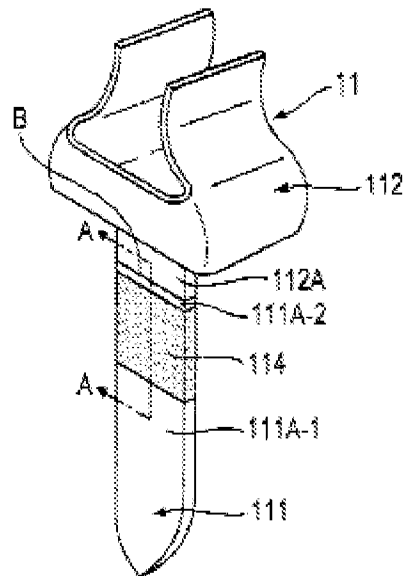


FIG. 6b

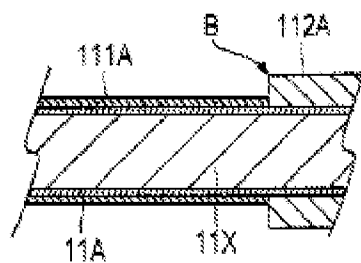
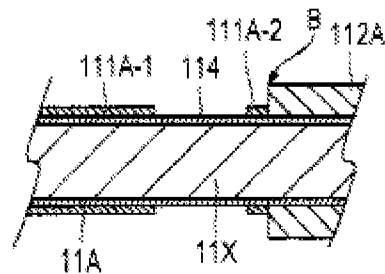


FIG. 6c



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP (5-90835).

JP ('835) discloses a connector with a terminal and a contact end. The mid-section of the connector is formed as an insulator in that flux and soldering cannot wet the section. Nickel plating and gold plating cover the connector. The nickel deposit is exposed.

The prior art discloses a product substantially similar to a claimed product, differing only in the manner by which it is produced. It has been held that one of ordinary skill in the art at the time of the invention would have considered the claimed product because of the similarity in properties. The burden falls to the applicant to show that any process steps associated with the claimed product result in a materially different product from those of the prior art, because there is nothing in the record before the examiner to reasonably conclude that applicant's product differs in kind from those obtained by the reference. See In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriuchi et al. (USPN 5,957,736).

Moriuchi et al. discloses an electronic part, that is, a contact. The contact (1) has a terminal portion (2) and contact portion (3). The contact may be plated with nickel, gold, palladium tin and so forth. The nickel oxide portion (4) prevents the solder from wicking, that is, diffusion prevention area due to the low wettability.

The prior art discloses a product substantially similar to a claimed product, differing only in the manner by which it is produced. It has been held that one of ordinary skill in the art at the time of the invention would have considered the claimed product because of the similarity in properties. The burden falls to the applicant to show that any process steps associated with the claimed product result in a materially different product from those of the prior art, because there is nothing in the record before the examiner to reasonably conclude that applicant's product differs in kind from those obtained by the reference. See In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324.

Claims 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (5-90835) as stated above and further in view of JP (60-238489).

JP ('835) does not disclose the use of lasers in the formation of the plated layers. JP ('489) discloses the formation of a metallic coating (contains Ni) in which a laser melts the metallic film forming an amorphous film. The amorphous film has high corrosion resistance, toughness and strength.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser beam, as taught by JP ('489) in the JP ('835) system because of the enhanced material properties with the new film.

Claims 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriuchi et al. as stated above and further in view of JP (60-238489).

Moriuchi et al. does not disclose the use of lasers in the formation of the plated layers.

JP ('489) discloses the formation of a metallic coating (contains Ni) in which a laser melts the metallic film forming an amorphous film. The amorphous film has high corrosion resistance, toughness and strength.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser beam, as taught by JP ('489) in the Moriuchi et al. system because of the enhanced material properties with the new film.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al., as stated above and further in view of Hashimoto et al. (USPN 4,772,773).

Saito et al. discloses the use of lasers but not their properties.

Hashimoto et al. discloses the processing of overlaid amorphous alloys layers. A laser melts the alloy layers and the vitrified phase is less than 10^{-2} sec. The beam irradiation time for melting must be smaller than 5 joule.sec/cm². The 200 W CO₂ laser whose diameter on the specimen surface was 100 μm was irradiated during the movement of the specimen along the x-axis at 436 mm/sec. The amorphous alloys thus formed have a very high mechanical strength with a considerable toughness, and some of them possess extremely high corrosion resistance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser beam, as taught by Hashimoto et al. in the Saito et al. system because of the enhanced material properties with the new film.

Claims 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (5-90835) as stated above and further in view of Hashimoto et al. (USPN 4,772,773).

JP ('835) does not disclose the use of lasers and their properties.

Hashimoto et al. discloses the processing of overlaid amorphous alloys layers. A laser melts the alloy layers and the vitrified phase is less than 10^{-2} sec. The beam irradiation time for melting must be smaller than 5 joule.sec/cm². The 200 W CO₂ laser whose diameter on the specimen surface was 100 μm was irradiated during the movement of the specimen along the x-axis at 436 mm/sec. The amorphous alloys thus formed have a very high mechanical strength with a considerable toughness, and some of them possess extremely high corrosion resistance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser beam, as taught by Hashimoto et al. in the JP ('835) system because of the enhanced material properties with the new film.

Claim 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriuchi et al. as stated above and further in view of Hashimoto et al. (USPN 4,772,773).

Moriuchi et al. does not disclose the use of lasers and their properties.

Hashimoto et al. discloses the processing of overlaid amorphous alloys layers. A laser melts the alloy layers and the vitrified phase is less than 10^{-2} sec. The beam irradiation time for melting must be smaller than 5 joule.sec/cm². The 200 W CO₂ laser

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whose diameter on the specimen surface was 100 μm was irradiated during the movement of the specimen along the x-axis at 436 mm/sec. The amorphous alloys thus formed have a very high mechanical strength with a considerable toughness, and some of them possess extremely high corrosion resistance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser beam, as taught by Hashimoto et al. in the Moriuchi et al. system because of the enhanced material properties with the new film.

Response to Arguments

Applicant's arguments filed 4/2/08 have been fully considered but they are not persuasive.

Applicant argues that Saito et al. does not teach a contact for a connector, a terminal portion, a contacting portion and a "diffusion preventing area between the terminal portion and the contacting portion. The examiner respectfully disagrees because (see figure 6a above) Saito et al. discloses a contact (11), a terminal section (111), a contact section (112) and an exposed region of poor wettability (114). Poor wettability and diffusion prevention are functional equivalents. Furthermore, the poor wettability (diffusion prevention) region is formed by selective removal of plating layers using laser beam machining.

Applicant argues that Saito et al. does not teach a nickel and gold plating layer which is removed. The examiner respectfully disagrees because Saito et al. discloses nickel and gold layers which are removed.

Applicant argues that Saito et al. discloses an arresting region while instant claims state a diffusion prevention region. It is the position of the examiner that poor wettability, diffusion prevention and arresting region are all one and the same because adhesion of material by diffusion is prevented.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 7, 2008.

/M. Alexandra Elve/
Primary Examiner, Art Unit 3742